PHENIX

TECHNICAL SUPPORT 2011

PHENIX WEEKLY PLANNING

9/29/2011

Don Lynch

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This Week

- RPC1 North Installation continues (Cable routing and rack assembly)
- Continue CM west side hanging platform installation
- Finished building RPC1 racks
- RPC1 survey
- Completed MuTr station 2 termination/dry air distribution header modification/re-installation on station 1 side/troubleshooting
- Removed station 2 access from station 1 side
- Reconfigured scaffolding for MuTr sta 1 N re-installation (upper)
- Completed re-installation of MuTr station 1 chambers and started QA testing
- Completed design Sta 2 (from station 3 side) & station 3 North access (lower $\frac{1}{2}$ only)
- Continue assembly & QA of RPC1S octants at RPC factory
- VTX repairs/upgrades/reassembly continued
- FVTX assembly continues
- Continue design and procurement for RPC3 shielding, Hodoscope, AH Crane upgrade & repairs, and R134A shed

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Next Week

- RPC1 North Installation continues, QA testing starts
- Complete CM west side hanging platform installation
- Install RPC1 racks
- RPC1 survey
- Remove scaffolding for MuTr sta 1 N lower FEE plate re-installation
- Re-install scaffolding for MuTr sta 1 N upper FEE plate re-installation
- Re-install north bridge section
- Begin installing MuTr station 2 & 3 North work platforms in MMN
- Continue assembly & QA of RPC1S octants at RPC factory
- VTX repairs/upgrades/reassembly continues
- FVTX assembly continues
- Design BP protection for south station 1
- Continue design and procurement for RPC3 shielding, Hodoscope, AH Crane upgrade & repairs, and R134A shed

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General Tasks

2011 Shutdown

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• Remaining Work Permits needed: End of Shutdown WP	10/1
• South BP protection	10/24
• Reinstall BBC North	10/10
• MPC N troubleshooting	10/10
• CM alignment stops	11/14
• Reinstall BBC South	11/14
• MPC S troubleshooting	11/21
• Upgrade AH crane	10/15-11/30
• DC/PC1 East/West troubleshooting as required	10/3-11/15
• Undefined detector subsystem maintenance and repairs	7/25-11/7
• RPC3 Shielding	11/21
• RPC Hodoscope	11/21
• Prep for EC roll in, reinstall MMS lampshade	11/28-12/2
• Roll in EC	12/5
• Prep IR for run	12/5-12/9
• VTX, FVTX and RPC1 Services and QA tests (including 4 new racks)	9/16-11/30
• BP Survey	10/17-12/12
• EC prep & roll-in, IR run prep, Pink/Blue/White sheets	12/5-12/23
• New and upgraded full detector commissioning	9/15-12/31
• Run 12 cooldown	1/1/2012

VTX/FVTX Tasks

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• VTX pixel/strip pixel repairs	9/26
• VTX re-assembly	10/3
• VTX QA tests	10/10
• VTX (w/o FVTX) survey	10/24
• FVTX procurement & Assembly	10/10
• FVTX QA tests	10/17
• VTX+FVTX final installation to start	10/21
• Final VTX+FVTX Integration & Survey in Chem Lab	10/24
• VTX+FVTX move to 1008	10/31
• VTX/FVTX Installation at 1008	
◦ Build 2 FVTX racks	7/1-10/31
◦ Install VTX/FTX, Re-connect VTX services, Install FVTX services, survey and QA tests	10/31-11/21
◦ VTX/FVTX Commissioning & Contingency	11/11-12/31
◦ Chiller leak/contamination improvements	10/1

VTX Status

- Stripixel:
  - High speed readout tests through DIB complete
  - Problems with west side FEM crate, will send to ORNL for further debugging
  - Will need to retest after barrels reassembled (4-5 days)
- Pixels
  - Leak testing complete. Leaks found and plugged w/ epoxy.
  - SPIRO board modifications complete. Delivery 29 Sept, 2011. Need to be tested, 30-Sept to 5-Oct.
  - East side disassembled and cleaned (27-28 Sept, 2011)
  - 4 ladders removed for visual inspection (29-Sept, 2011)

VTX Status

- Pixels Continued
  - 3 replacement ladders to arrive 4 Oct, 2011.
  - Test and install new ladders on east side, 5-7 Oct, 2011
  - Reassemble west side 5-12 Oct, 2011
    - Cooling tubes on big wheel
    - SPIRO Boards
    - Barrels
    - Leak check
    - Test readout
  - Reassemble side 13-20 Oct 2011
    - Same steps as west side

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MuTr North Station 1 work

• Clean/install new parts and upgrades (MuTr (3 weeks, At RPC Factory)	Done
• Re-install chambers and FEE plates (1 week)	In progress
• Re-install north section of bridge	10/4
• Re-cable, re-hose and test (3 weeks)	in progress
• Move CM north	10/21

MuTr Station 2 N (from sta 1 side) terminators and Dry air header mod

• Station 2 Maintenance/upgrade through access opened by station 1 removal	Done

MuTr North & South Station 2 & 3 Re-cap clamps

(No internal work platforms to upper octants)

• Install new capacitor clamps and terminators in lower octants	(In Progress) 7/25-12/31
• Re-install MMS east vertical lampshade	11/15

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RPC Tasks

• Assembly at QA tests at RPC Factory	10/17
• Build 1 new rack, upgrade existing RPC1 prototype rack	Done
• Install north RPC1 (including both racks & services)	9/6-10/7
• HV Tests, gas system calibration	9/23-10/21
• Move Station 1 work platforms to south station 1	10/28
• Install south RPC1	10/31-11/23
• Remove all scaffolding and hanging platforms	12/5
• RPC1 north and south commissioning	9/6-12/5
• RPC3 HV Distribution modifications, gas distribution modifications, PS calibration HV and services testing	7/1-12/5

Electronics Group Tasks

2011 Shutdown

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• RPC1	
• HV Cables	*Ready for routing*
• Signal cables	*Ready for installation*
• LV cables	*Ready for innstallation*
• Racks	
• Assembly	*Done*
• Install on bridge	*10/7*
• RPC3 additional HV boxes	*Ass'y in progress*
• FVTX	
• Bias cables	*pigtails due 9/26, extensions PO placed*
• LV cables	*PO placed term. of ROC LV cables in-house*
• Fiber	*PO placed, Control & trunk fibers and patch bays ready*
• *Mapper boards*	*PO placed*
• CMT3 and CMT4 FVTX racks	
• Assembly	*10/31*
• Install on bridge	*11/4*
• VTX Modify thermocouple connections	*Procurement Done, installation 11/21*
• PC Board Designs	
• PbSc teminator board production	*sent for fabrication*
• New LV Dist front panels	*sent for fabrication*
• GL1 6X1 Multiplexer assemblies	*final checking this week*
• New MPC junction board	*waiting for specs*
• Dual SVX board for E. Kistenev	*waiting for specs*
• West carriage ADAM system performance upgrade	*2 new Modbus servers arrived, bench test & install panel upgrade in WCB for single ADAM control*
• LeCroy HV control retrofit testing	*Still Waiting for doc. from Debrecen Inst*
• Design/Install FVTX Interlock system.	*Design Done ready for installation*

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Miscellaneous Gas & Cooling System Tasks

• Redo bypass line on VTX/FVTX spare chiller to remove kink	7/1-12/31
• Move RPC R134A tanks nearer to GMH, install cover, insulated lines	7/1-12/31
• Replace MuTr flowmeters (north and south)	7/1-12/31
• RPC ¼" copper line from RPC rack to CM	7/1-12/31
• Relocate RPC3 South gas rack from tunnel mezzanine to tunnel floor	Done

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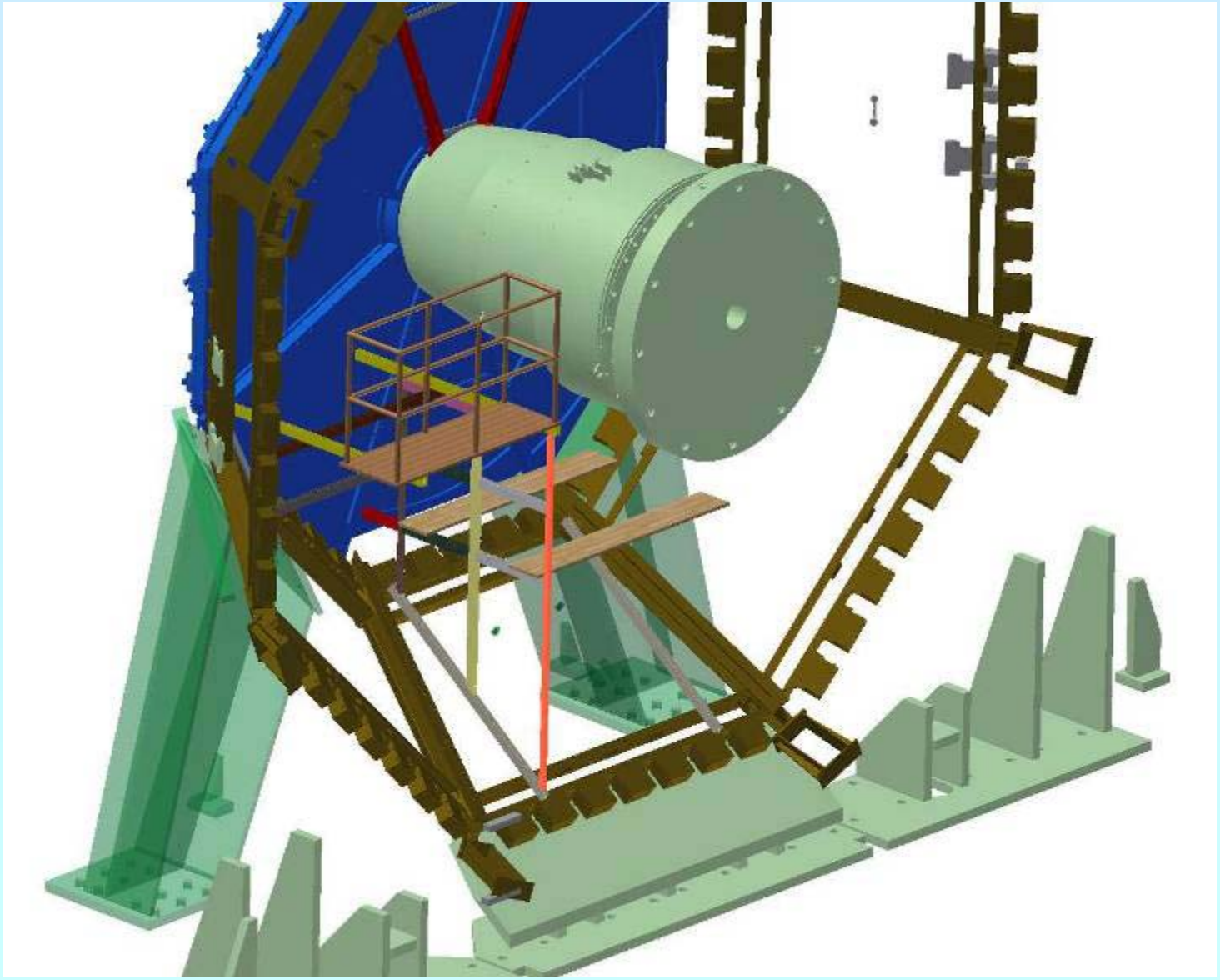

Station 2/3
Access

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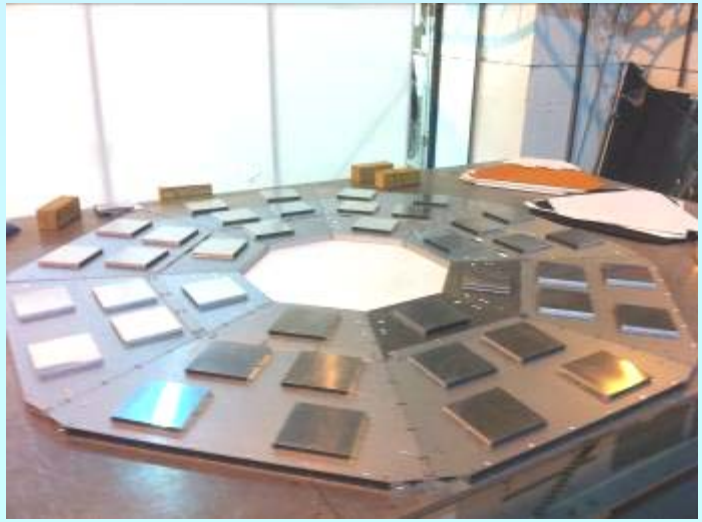

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Worker Planned Work:

Cable Routing for RPC1

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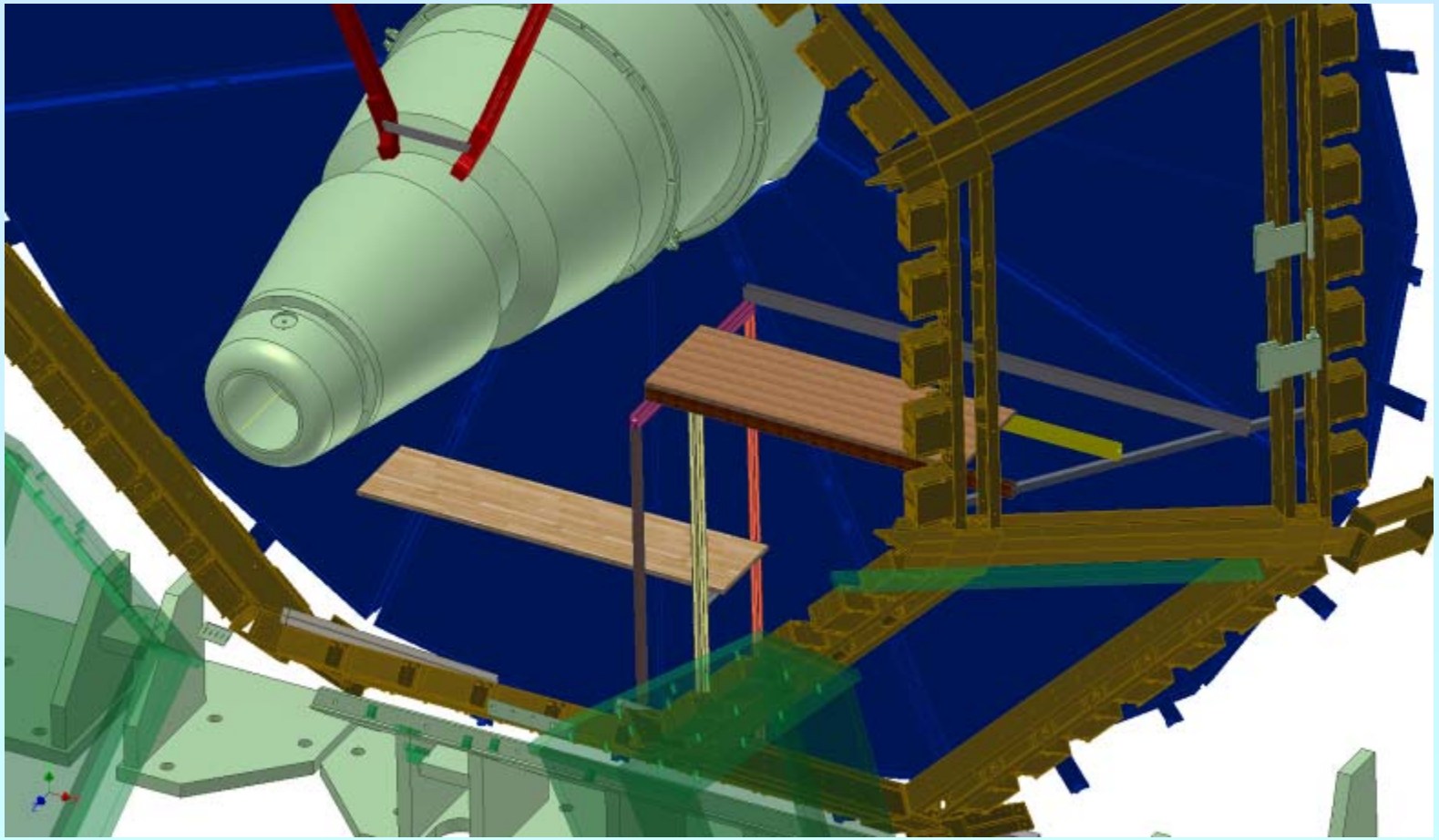
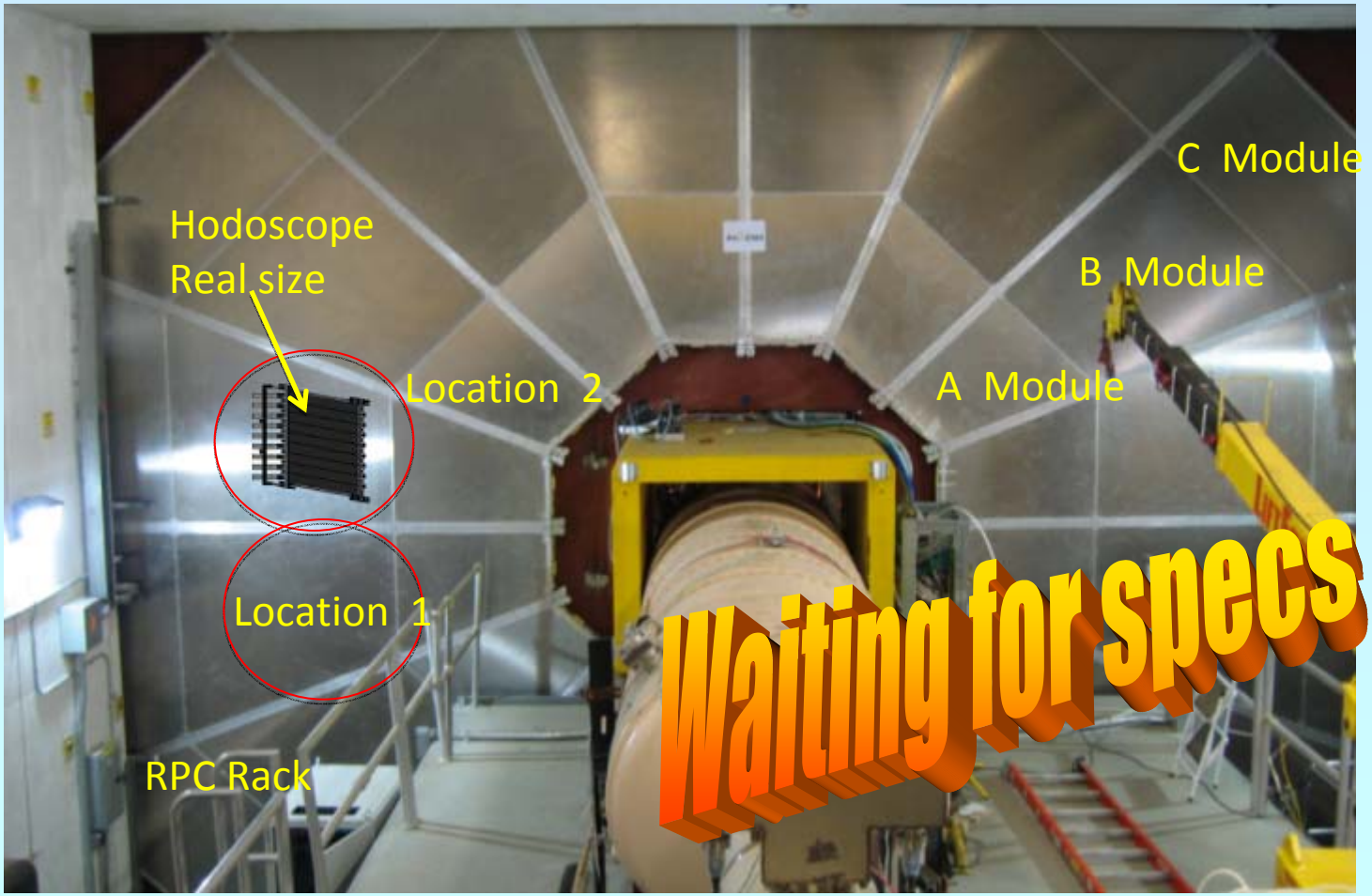


RPC Hodoscope



Close to RPC3 electronics rack
Less Beam background region

Location 1 or 2 would be good position

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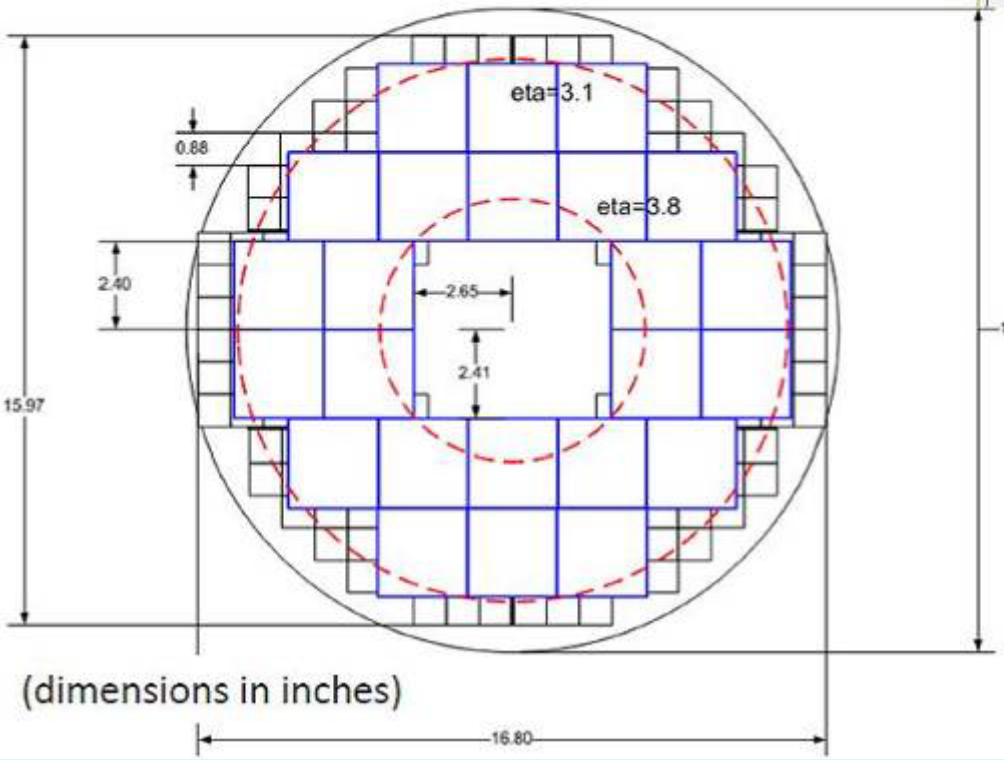
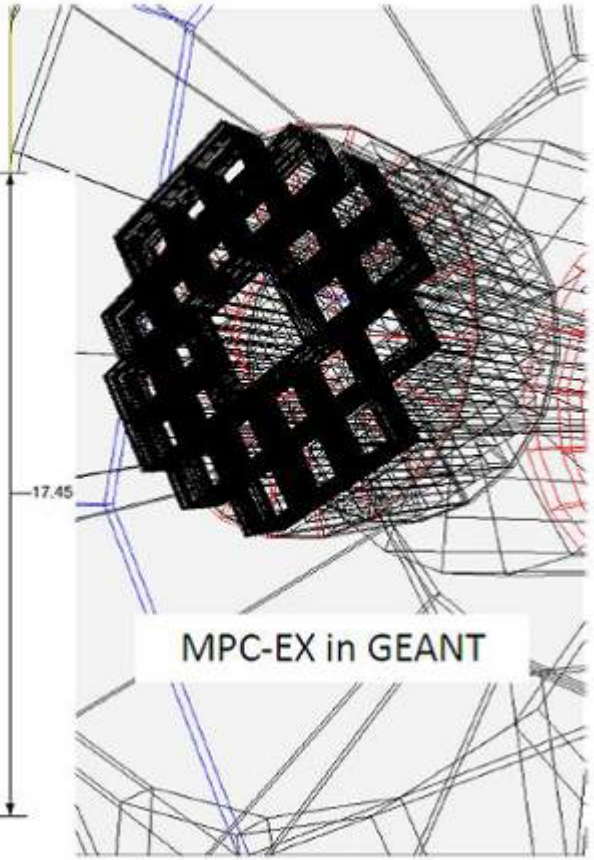
Need shed for R134A bottles close to GMH.
No heating in shed (except heating blankets), lines to be insulated. Last year heating blankets kept gas warm but long length of pipe allowed gas to liquify on coldest days.

Possible location for shed 8' deep with 10' x 8' doors, and with bottom and top openings.. should satisfy ODH issues ~$2K.

Design of the MPC-EX

Detector is designed around 6.2cm x 6.2cm modules (Si pad or strip detectors) separated by 2mm tungsten plates.





From John LaJoie's DC slides

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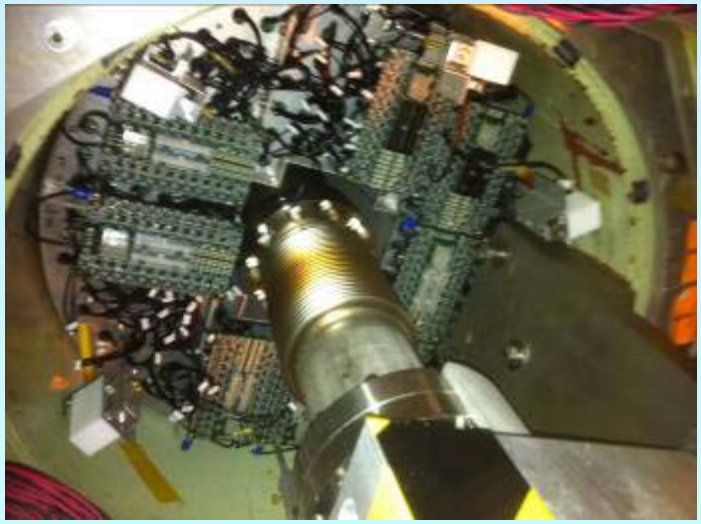

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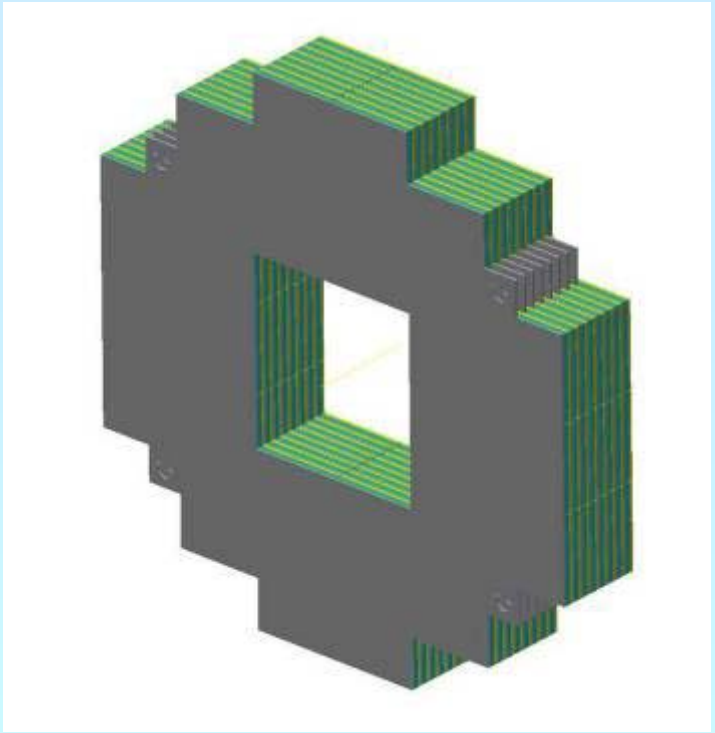

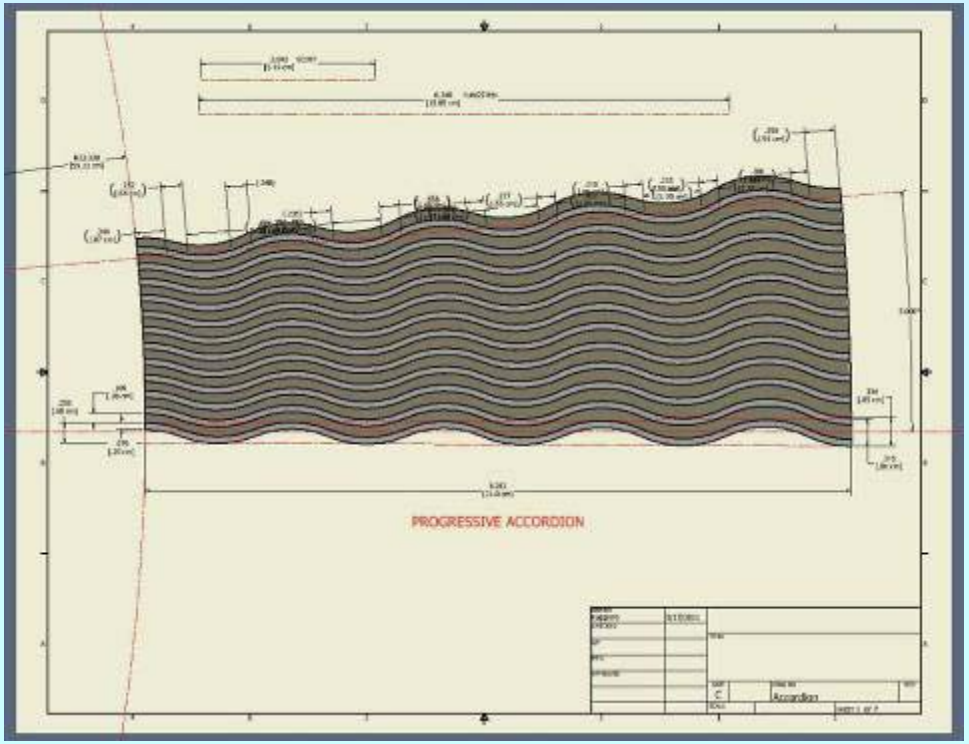

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- Roof leaks in utility bathroom at northwest corner behind tech offices, over door between rack room and assembly hall, over door between control room and elect. ass'y room, southeast corner of IR and laser room.

- Flooding in AH/ Driveway heaving

- Electronics test/assembly room-to-parking lot door (does not open/close/lock properly – needs to be replaced)
- Temperature in utility hall (where new air compressor is installed) is exceedingly high (transformer cases as high as 135 F)

Safety, Security, Etc.

From Ed Lessard:

1. Please make sure that all C-AD facility doors are locked at the end of each day. BNL police make routine tours and report any doors found unlocked or propped open to C-AD Management. The problem is not only the potential for theft or equipment damage but the loss to credibility in C-AD's ability to maintain a proper security posture.

2. Access doors into accelerator enclosures must not be blocked open or tied back without the permission of the ESSHQ Division Head (Ray Karol, x5272) or the ESH Coordinator (Asher Etkin, x4006). Accelerator enclosures at C-AD contain hazardous areas even when access is allowed. Because these hazardous areas are inside the enclosure, doors to the enclosures are barriers that help ensure only trained and qualified workers enter the enclosure. Blocking the doors open allows people who are not familiar with the hazards (e.g., electrical, radiological, ODH and vacuum hazards) to enter the enclosure and be unknowingly exposed to risk of injury.

3. Work Planning and Control SBMS subject area has been revised:

   What's new? Not too much, just new titles, flowcharts etc. clarifications on worker planned work, info on pre-work walkthrus, minor revisions to work permits,

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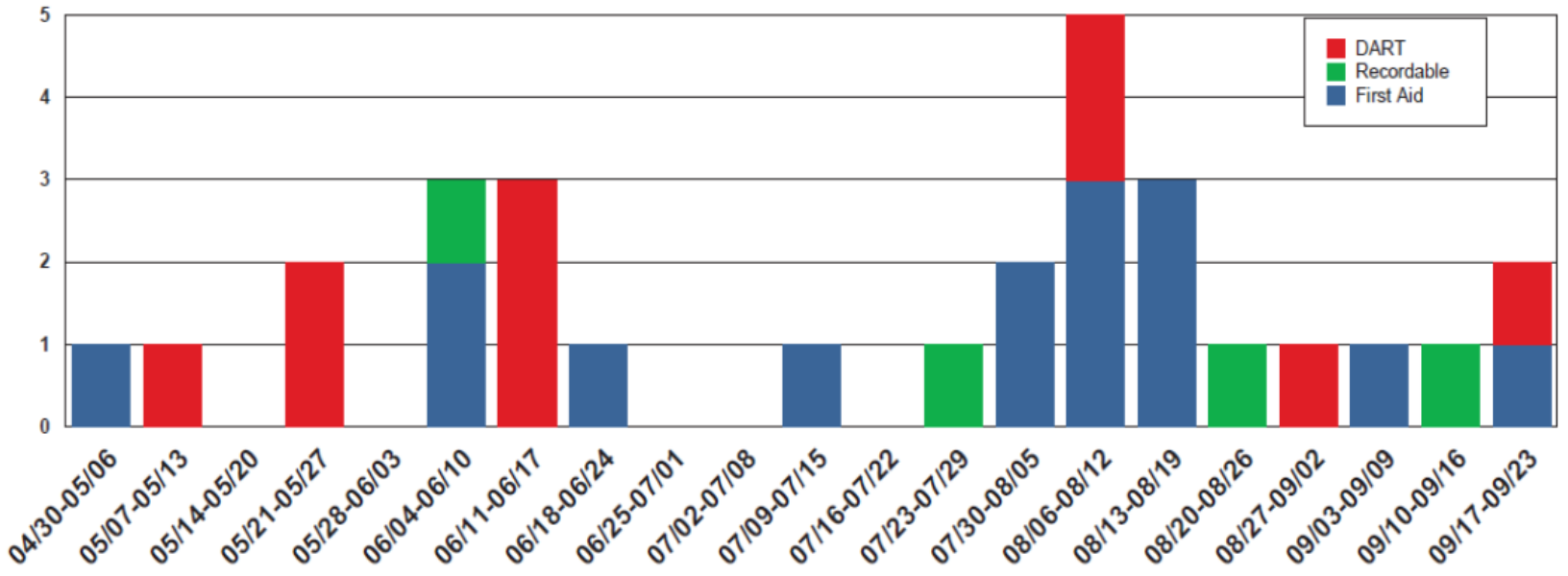

Injury Status:

FY11 YTD: DART – 28, TRC – 43, First Aid – 41

FY10: DART – 17, TRC – 32, First Aid – 52

1 new DART: finger caught in door of car

1 first aid: hurt leg during qualifying run

Where To Find PHENIX Engineering Info

Things are looking good. The shutdown is progressing well and we're starting to see the rainbow after the storm.

Links for the weekly planning meeting slides, archives of past meeting slides,long term planning, pictures, videos and other technical info can be found on the PHENIX Engineering web site:

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm